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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,246

03/17/2005

Byong-Sung Kwak

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05/09/2008

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EXAMINER

OH, TAYLOR V

ART UNIT

PAPER NUMBER

1625

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

It is noted that applicants have filed an Amendment after the Final Rejection on 4/21/08; applicants' attorney has addressed the issues of record. The proposed amendment will be entered ; BUT , it is not in a condition for allowance.

**The Status of Claims:**

Claims 1-2, 4-13 are pending.

Claims 1-2, 4-13 are rejected.

**Claim Objections**

The objection of Claim 16 has been withdrawn due to the cancellation of the claim.

**Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The rejection of Claims 1-2,4-16 under 35 U.S.C. 112, second paragraph, has been withdrawn due to the modification made in the claims.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejection of Claims 1-2, and 4-16 under 35 U.S.C. 103(a) as being unpatentable over Kwak et al (WO 02/10147 A1) in view of Aslam et al (Kirk –Othermer Encyclopedia of Chemical Technology, vol. 10, 12/4/2000, p.477) has been maintained with reasons of record filed on 2/19/08.

**Applicants' Argument**

Applicants argue the following issues:

- a. Kwak fails to disclose a motivation to use an acid additive in the hydrogenation of substituted carboxylic acid , either alone or in combination with Aslam in order to increase the optical purity at the initial reaction stage .

Applicants' arguments have been noted, but the arguments are not persuasive.

First, regarding the applicants' argument , the Examiner has noted applicants' arguments. However, the Kwak et al does address the production of optically pure (S)-beta-hydroxy-gamma-butyrolactone through the hydrogenation of substituted

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carboxylic acid (see abstract page) and (see page 13, the second paragraph).

Furthermore, during the continuous preparation of dimethyl (s)-malate, the L-malic acid is introduced and dissolved (see page 12, the second paragraph), which serves the same purpose as the addition of the organic or inorganic acid to the reactor;.

Moreover, as a result of the process, the Kwak et al does emphasize the followings(see page 12, the first paragraph):

The effluent from the reactor was distilled in vacuum to separate at a separation yield of 90 % dimethyl (S)-malate which was 99.8 % in purity and 99.9 % in optical purity. The preparation could be effected in a batch type. In this case, the reaction period of time was set to be 2 to 4 hours.

From these teachings, it becomes so clear that the Kwak et al show 99.9 % in optical purity which is quite comparable to the applicants' high optical purity (ee >99.0%). Therefore, applicants' argument is not persuasive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Taylor Victor Oh/  
Primary Examiner, Art Unit 1625  
5/7/08

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